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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,283	02/08/2001	William H. Gong	37,248-01	6597

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/13/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,283

Applicant(s)

GONG ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-14 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

The claim objections and rejections under 35 USC 112, 102, and 103 as described in paper no. 3 have been withdrawn in view of the amendment filed on December 26, 2002 and remarks contained therein. The obviousness-type double patenting rejection described in paper no. 3 is withdrawn in view of the Terminal Disclaimer filed on December 26, 2002.

New rejections follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4-8, 11, 14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Schultz et al. (US 2,365,220).

The EP reference discloses a process for the production of a fuel. The process comprises contacting a hydrocarbon fraction with oxygen in the presence of a soluble catalyst system to produce an oxidized product with improved characteristics including improved cetane number. The hydrocarbon fractions are middle distillates that would necessarily have API gravities within the claimed range and they may contain sulfur or nitrogen. The soluble catalyst contains metals as claimed. The oxidized product is treated by separating an aqueous portion from the organic portion. The hydrocarbon to be oxidized may be hydrotreated prior to oxidation by contacting the hydrocarbon with a supported Group VI and/or VIII metal catalyst at hydrotreating conditions. The oxidation process may treat the entire hydrocarbon stream or a fraction of it. See page 3, lines 1-35; page 4, lines 41-58; page 5, lines 1-32; page 20, lines 1-13; and the examples.

The EP reference does not disclose treating the oxidized product with a neutralizing agent, does not disclose recycling the catalyst as in claim 4, does not disclose the percent by weight of metal in the hydrotreating catalyst as in claim 6, and does not disclose the partitioning of fractions of claims 7 and 11.

The Schultz reference discloses the need for neutralizing acids in oxidized hydrocarbon streams. See page 6, right column, lines 23-54.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by neutralizing the oxidized product as suggested by Schultz because a stable, non-acidic product will result.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by recycling the catalyst because the economics of the process will be improved.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing amounts of metals in the hydrotreating catalyst as claimed because suitable catalysts are well known to those skilled in the art and therefore one would utilize a catalyst having metal amounts that result in the desired hydrotreating effect.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by partitioning fractions as claimed because the reference discloses that only a fraction of the feed may be treated by oxidizing. Therefore, one of skill in the art would choose the fractions that would result in the desired product.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Lyons et al. (US 4,375,361).

As discussed above, the EP reference does not disclose catalysts having the formula as in claims 9 and 10.

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The Lyons reference discloses that metal acetylacetonates are effective hydrocarbon oxidation catalysts. These compounds have the same structure as claimed. No halogen-containing component is present in the catalyst. See col. 2, lines 4-33.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing the catalysts disclosed by Lyons because these catalysts are effective in hydrocarbon oxidation processes and therefore would be expected to be effective in the EP process.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Schultz et al. (US 2,365,220) as applied to claim 21 above, and further in view of Farkas et al. (US 2,472,152).

The Farkas reference discloses that oxidized hydrocarbon streams can be neutralized by contacting the streams with alkali metal carbonates, bicarbonates, and hydroxides. See column 9, line 30 through column 10, line 13.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the previously discussed references by utilizing a carbonate or bicarbonate neutralizing agent as suggested by Farkas because these neutralizing agents would neutralize acids equivalently to the neutralizing agents disclosed by Schultz.

Response to Arguments

The argument that the EP reference does not disclose or suggest maintaining the liquid reaction medium substantially free of halogen and/or halogen-containing compounds is not

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persuasive. The EP reference does not require the presence of halogen and/or halogen-containing compounds.

The argument that the EP reference does not disclose the reduction of sulfur and nitrogen by oxidation is not persuasive. Example 1 indicates that sulfur is reduced in the oxidized product as compared to the starting material.

The argument that the combination of the EP reference and Schultz reference is improper is not persuasive because Schultz treats products such as those produced in the process disclosed by the EP reference.

The argument that the EP reference does not suggest partitioning the feed is not persuasive. The oxidation process disclosed in the EP reference may treat the entire hydrocarbon stream or a fraction of it. Therefore, the examiner maintains that partitioning the feed is suggested by the EP reference.

Allowable Subject Matter

Claims 15-20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest a process as claimed in which the high boiling part is contacted with an organic peracid, the resulting phase is separated, and the oxidized phase is contacted with a sorbent.

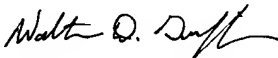
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
March 5, 2003